



DEPARTMENT OF PERMITTING, ENVIRONMENT, AND REGULATORY
AFFAIRS (PERA)
BOARD AND CODE ADMINISTRATION DIVISION
NOTICE OF ACCEPTANCE (NOA)

MIAMI-DADE COUNTY
PRODUCT CONTROL SECTION
11805 SW 26 Street, Room 208
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DURO-LAST Roofing, Inc.
525 Morley Drive
Saginaw, MI 48601

SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed and accepted by Miami-Dade County PERA – Product Control Section to be used in Miami-Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Section (In Miami-Dade County) and/or the AHJ (in areas other than Miami-Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. PERA reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Section that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein, and has been designed to comply with the Florida Building Code including the High Velocity Hurricane Zone of the Florida Building Code.

DESCRIPTION: DURO-LAST Single Ply PVC Roof Systems over Lightweight Concrete Decks.

LABELING: Each unit shall bear a permanent label with the manufacturer's name or logo, city, state, and following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

RENEWAL of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

TERMINATION of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/ or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

ADVERTISEMENT: The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

INSPECTION: A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This NOA renews and revises NOA No. 07-0411.05 and consists of pages 1 through 6.
The submitted documentation was reviewed by Jorge L. Acebo.



NOA No.: 12-0516.12
Expiration Date: 08/22/17
Approval Date: 08/16/12
Page 1 of 6

ROOFING SYSTEM APPROVAL

Category: Roofing
Sub-Category: Single Ply
Material: PVC
Deck Type: Lightweight Concrete
Maximum Design Pressure -45 psf

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

TABLE 1

<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
Duro-Last Membrane	.037" thick, fabricated in sheets up to 3000 sq. ft.	ASTM D 4434,	PVC polymer blend polyester reinforced roofing membrane: white, tan or gray.
Duro-Last Membrane	.045" thick, fabricated in sheets up to 2000 sq. ft.	ASTM D 4434	PVC polymer blend polyester reinforced roofing membrane: white, tan or gray.
Duro-Last Membrane	.057" thick, fabricated in sheets up to 1800 sq. ft.	ASTM D 4434	PVC polymer blend polyester reinforced roofing membrane: white, tan or gray.
Duro-Last Accessories	Various	ASTM D 4434	Custom fabricated accessories for parapets and penetrations in the Duro-Last roof.
Duro-Last Fascia Bar	1¾" x 10' 4" x 10'		Extruded vinyl drip edge with holes punched 8" o.c..
Duro-Last Fascia Bar Cover	1¾" x 10' 4" x 10'		Extruded decorative cover for Duro-Last Fascia Bar: white, tan or gray.
Duro-Last Vinyl Coated Sheet Steel	4' x 10' .043" thick	G-90	G-90 galvanized steel, laminated with Duro-Last Vinyl Film.
Duro-Last Drip Edge	2" face x 10' 4" face x 10' 6" face x 5'		Extruded vinyl drip edge with holes punched 8" o.c.
Duro-Last Gravel Stop	2" face x 10' 4" face x 10; 6" face x 5'		Extruded vinyl gravel stop with holes punched 8" o.c..
Duro-Last Two-Way Roof Vents			Injection molded two-way roof vents with a Duro-Last membrane skirt.
Roof-Trak Walk Pads	30" x 60" x .125" thick		Extruded vinyl walk way pads manufactured from Duro-Last membrane.

APPROVED INSULATIONS:

TABLE 2		
Product Name	Product Description	Manufacturer (With Current NOA)
ACFoam II	Polyisocyanurate foam insulation	Atlas Roofing Corp
ENRGY-3, ENRGY-3 25 PSI	Polyisocyanurate foam insulation	Johns Manville
EPS	Type IX Expanded polystyrene with a minimum density of 1.8 pcf	Generic
XPS	Type IV Extruded polystyrene with a minimum density of 1.6 pcf	Generic
DensDeck	Silicon treated gypsum	G-P Gypsum
Type X Gypsum	Gypsum board	Generic

APPROVED FASTENERS:

TABLE 3				
Fastener Number	Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
1.	Duro-Last Duro-Coated Fasteners #14	Roofing and insulation fasteners, Duro-Coated with #3 Phillips head.	Various Lengths	Duro-Last
2.	Duro-Last Steel Plates	Galvalume steel stress plates.	3" square	Duro-Last
3.	Duro-Last Insulation Plates	Round plastic stress plates.	3" round	Duro-Last
4.	Duro-Last Polyplates	Round plastic stress plates.	2" round	Duro-Last
5.	Polymer Gyptec Fastener	Glass reinforced nylon fastener	Various Lengths	OMG, Inc.
6.	3" GypTec Plates	Galvalume steel stress plates.	3" round	OMG, Inc.

EVIDENCE SUBMITTED:

<u>Test Agency/Identifier</u>	<u>Name</u>	<u>Report</u>	<u>Date</u>
Factory Mutual Research Corporation	J.I. 3Y5A6.AM	Class 4470	03-10-95
	J.I. 2M4A8 .AM	Class 4470	03-05-87
	J.I. 3Y5A6.AM	Class 4470	03-10-95
	J.I. 1X2A7 .AM	Class 4470	08-90-99
	3005604	Class 4470	03-13-00
	3008342	Class 4470	10-19-00
Exterior Research & Design, LLC	02732.09.04	ASTM D4434	09-28-04
Trinity ERD	02750.02.08-R2	ASTM D4434 / AC75	08-03-12
Intertek Testing Services, NA Inc.	3119586-001	TAS 111	07-10-07



NOA No.: 12-0516.12
Expiration Date: 08/22/17
Approval Date: 08/16/12
Page 3 of 6

APPROVED ASSEMBLIES:

Membrane Type:	Single Ply, PVC
Deck Type 4I:	Lightweight Insulating Concrete Decks, Insulated
Deck Description:	Cellular or aggregate lightweight insulating concrete
System Type D:	All layers of insulation are preliminarily attached to roof deck as specified below. Membrane is mechanically attached to deck through the insulation layers.

All General and System Limitations apply.

Vapor Barrier:	Required to be installed between the LWC deck and Insulation layer; any UL or FM approved vapor barrier.
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Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft ²
ACFoam II, ENRGY-3, ENRGY-3 25 PSI, Any Approved XPS or EPS		
Minimum 1" thick	1 or 5	1:4 ft ²
	1 or 5	1:6.4 ft ²

Note: Insulation layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details).

Barrier Sheet:	Atlas Roofing Corporation FR-10 [®] , ¼" DensDeck, ½" thick UL Classification Type X Gypsum with a moisture resistant facer and core, or a second sheet of barrier board may be used over the insulation (see General Limitation #1).
Membrane with 57" tabs:	Duro-Last [®] membrane shall be mechanically attached at its 3" tabs, spaced every 57" with Duro-Last fasteners and Poly-Plates [®] spaced 12" o.c. maximum, through the insulation and into the structural deck. Laps are sealed with a minimum 1.5" wide heat weld.
Membrane with 27" tabs:	Duro-Last [®] membrane shall be mechanically attached at its 3" tabs, spaced every 27" with Duro-Last fasteners with Duro-Last 2 in. Poly-Plates [®] spaced 18" o.c. maximum, through the insulation and into the structural deck. Laps are sealed with a minimum 1.5" wide heat weld.
Maximum Design Pressure:	-45 psf (See General Limitation #7)



Membrane Type: Single Ply, PVC
Deck Type 4: Lightweight Insulating Concrete Decks, Non-Insulated
Deck Description: Cellular or aggregate lightweight insulating concrete
System Type E: Membrane mechanically attached to roof deck.

All General and System Limitations apply.

Vapor Barrier: (Optional) Required if DensDeck or Type X Gypsum is used as a fire barrier. Any UL or FM approved vapor barrier.

Barrier Sheet: Atlas Roofing Corporation FR-10[®], ¼" DensDeck, ½" thick UL Classification Type X Gypsum with a moisture resistant facer and core, or a second sheet of barrier board may be used over the insulation (see General Limitation #1).

Membrane with 57" tabs: Duro-Last[®] membrane shall be mechanically attached at its 3" tabs, spaced every 57" with Duro-Last fasteners and Poly-Plates[®] spaced 12" o.c. maximum, through the lightweight concrete and into the structural deck. Laps are sealed with a minimum 1.5" wide heat weld.

Membrane with 27" tabs: Duro-Last[®] membrane shall be mechanically attached at its 3" tabs, spaced every 27" with Duro-Last fasteners with Duro-Last 2 in. Poly-Plates[®] spaced 18" o.c. maximum, through the lightweight concrete and into the structural deck. Laps are sealed with a minimum 1.5" wide heat weld.

Maximum Design Pressure: -45 psf (See General Limitation #7)



LIGHTWEIGHT INSULATING CONCRETE SYSTEM LIMITATIONS:

1. If mechanical attachment to the structural deck through the lightweight insulating concrete is proposed, a field withdrawal resistance testing shall be performed to determine equivalent or enhanced fastener patterns and density. All testing and fastening design shall be in compliance with Testing Application Standard TAS 105 and Roofing Application Standard RAS 117 and/or RAS 137, calculations shall be signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant.
2. For steel deck application where specific deck construction is not referenced: The deck shall be a minimum 22 gage attached with 5/8" puddle welds with weld washers at every flute with maximum deck spans of 5 ft. o.c.
3. For Systems where specific lightweight insulating concrete is referenced consult current lightweight insulating concrete NOA for specific deck construction and limitations. For systems where specific lightweight insulating concrete is not referenced, the minimum design mix shall be a minimum of 300 psi.

GENERAL LIMITATIONS:

1. Fire classification is not part of this acceptance, refer to a current Approved Roofing Materials Directory for fire ratings of this product.
2. Insulation may be installed in multiple layers. The first layer shall be attached in compliance with Product Control Approval guidelines. All other layers shall be adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq., or mechanically attached using the fastening pattern of the top layer
3. All standard panel sizes are acceptable for mechanical attachment. When applied in approved asphalt, panel size shall be 4' x 4' maximum.
4. An overlay and/or recovery board insulation panel is required on all applications over closed cell foam insulations when the base sheet is fully mopped. If no recovery board is used the base sheet shall be applied using spot mopping with approved asphalt, 12" diameter circles, 24" o.c.; or strip mopped 8" ribbons in three rows, one at each sidelap and one down the center of the sheet allowing a continuous area of ventilation. Encircling of the strips is not acceptable. A 6" break shall be placed every 12' in each ribbon to allow cross ventilation. Asphalt application of either system shall be at a minimum rate of 12 lbs./sq. **Note: Spot attached systems shall be limited to a maximum design pressure of -45 psf.**
5. Fastener spacing for insulation attachment is based on a Minimum Characteristic Force (F') value of 275 lbf., as tested in compliance with Testing Application Standard TAS 105. If the fastener value, as field-tested, are below 275 lbf. insulation attachment shall not be acceptable.
6. Fastener spacing for mechanical attachment of anchor/base sheet or membrane attachment is based on a minimum fastener resistance value in conjunction with the maximum design value listed within a specific system. Should the fastener resistance be less than that required, as determined by the Building Official, a revised fastener spacing, prepared, signed and sealed by a Florida Registered Engineer, Architect, or Registered Roof Consultant may be submitted. Said revised fastener spacing shall utilize the withdrawal resistance value taken from Testing Application Standards TAS 105 and calculations in compliance with Roofing Application Standard RAS 117.
7. Perimeter and corner areas shall comply with the enhanced uplift pressure requirements of these areas. Fastener densities shall be increased for both insulation and base sheet as calculated in compliance with Roofing Application Standard RAS 117 and/or RAS 137. Calculations prepared, signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant **(When this limitation is specifically referred within this NOA, General Limitation #9 will not be applicable.)**
8. All attachment and sizing of perimeter nailers, metal profile, and/or flashing termination designs shall conform with Roofing Application Standard RAS 111 and applicable wind load requirements.
9. The maximum designed pressure limitation listed shall be applicable to all roof pressure zones (i.e. field, perimeters, and corners). Neither rational analysis, nor extrapolation shall be permitted for enhanced fastening at enhanced pressure zones (i.e. perimeters, extended corners and corners). **(When this limitation is specifically referred within this NOA, General Limitation #7 will not be applicable.)**
10. All products listed herein shall have a quality assurance audit in accordance with the Florida Building Code and Rule 9N-3 of the Florida Administrative Code.

END OF THIS ACCEPTANCE



NOA No.: 12-0516.12
Expiration Date: 08/22/17
Approval Date: 08/16/12
Page 6 of 6